



ASSAM UNIVERSITY, SILCHAR

TENDER NOTICE NO. AUS/TSSOT/AE/Procurement (ACF) / Tender/ 2017/ 01
DATED 27th October 2017

**FOR SUPPLY OF LAB EQUIPMENTS AND ACCESORIES FOR THE
DEPARTMENT OF AGRICULTURAL ENGINEERING**

NOTIFICATION NO. : AUS/TSSOT/AE/Procurement (ACF)/Tender/2017/01
DATE OF ISSUE : 27th October 2017

BID CLOSING TIME AND DATE :14.00 Hrs of 16-11-2017

APPLICATION FEE FOR SUBMITTING TENDER : Rs. 1000.00

DETAILS OF EQUIPMENTS: AS PER ANNEXURE. No.1

Ref : AUS/TSSOT/AE/Procurement (ACF)/Tender/2017



Assam University, Silchar-788011

Sealed tenders are invited from the manufacturers/authorized distributors /Suppliers for supplying **Lab Equipments and accessories for the Department of Agricultural Engineering and** must be submitted in two parts (**Part-I: Technical Proposal, Part-II: Financial Proposal**) in separate envelopes. These two envelopes may be put into a sealed envelope, super scribing therein “tender No., Bid, Closing Date, Bidder’s name etc” and dropped in the tender box placed at the office of the undersigned on or before the bid closing time and date. -The details, and terms and conditions, etc. can be downloaded from the website **<http://www.aus.ac.in>** or collected from the office of the undersigned on payment of Rs. 1000.00 in the form of Demand Draft in favour of the Finance Officer, Assam University, Silchar. **Last date of submission of tender is 16th November 2017 by 02.00 PM.**

Sd/-

Head

**Deptt. of Agricultural Engineering
Assam University, Silchar-788011**

ASSAM UNIVERSITY, SILCHAR
TERMS AND CONDITIONS FOR SUPPLYING EQUIPMENTS/TOOLS AND
MACHINES

Ref : AUS/TSSOT/AE/Procurement (ACF)/Tender/2017

1. Only manufactures / Distributors/ Authorized Dealers/Suppliers (Herein after called party) of reputed brands having wide experience in dealing with lab equipments only may submit the tenders.
2. The manufacturer having ISO 9002 certificate or similar certification would be preferred.
3. The party must submit the latest Income tax & Sales tax clearance certificates with the tender.
4. The party must have experience in supply & installation of lab equipments in Govt. organization / public sector etc with last three years. Certificates in this regard from the responsible officer of that organization with contact no. e-mail address etc. is to be submitted.
5. The tender should be submitted in a sealed envelope superscribed as **“TENDER FOR SUPPLY OF LAB EQUIPMENTS FOR THE DEPARTMENT OF AGRICULTURAL ENGINEERING”** addressed to the **Head Department of Agricultural Engineering, Assam University, Silchar.**
6. **The tender should be accompanied with a call deposit receipt or 2.5% of the estimated value of the item quoted the call deposit to be drawn from any nationalized bank pledged in favour of the Finance Officer, Assam University, Silchar as earnest money.**
7. The party should quote one rate per item, which should be inclusive of all taxes. The rate so quoted should be F.O.R Assam University, Dargakona, Silchar. The standard warranty period should be 1 year from the date of installation. **In case vendor wishes to quote for extended warranty period it should be quoted separately.**
8. The rate quoted should be for the items & specification as mentioned in the list. The party should not quote for specification. **If the party wishes to quote for a higher /superior specification, it must be separately stated along with proof that the specification is higher/superior.** In no case they should quote for lower/inferior specification. In that case the tender will not be considered.
9. **Being an educational Institute, Assam University, Silchar is entitled for custom & central excise duty exemption for procurement of scientific equipment etc. The interested party while quoting rates should indicate the excise duty component and tax component separately.**
10. The bidders shall have to submit their tenders within **02.00 PM of 16th November 2017** at the Department of Agricultural Engineering, Assam University, Silchar. No tender shall be entertained after the scheduled time and date of submission of tenders. The same will be opened on **16th November 2017 at 3.00 PM.** The bidder may depute only one representative to be present at the time of opening the tender.
11. A committee of experts constituted by the University authority will check the technical and financial implications of each tender to prepare the panel of successful Tenders.

12. The selected bidder after receipt of supply order has to **deposit 7.5% of supply order value in the form of FDR from any nationalized bank in favour of Finance Officer. Assam University payable at Dargakona, Silchar as Security deposit. In addition, the earnest money deposited shall also be retained as security deposit. The security deposit will be released only after completion of warranty period.**
13. **The successful bidder shall have to supply the materials strictly as per the configuration as stated in the supply order should conform to the made /brand quoted and shall have to complete the supply within 30 days from the date of issue of order. Otherwise, the order shall automatically stand cancelled and the security deposit of the bidder shall be forfeited. No communication in this regard will be entertained. In such eventuality the University will have the right to place order to the next bidder from the panel.**
14. Earnest money of unsuccessful bidders will be released after finalization of the deal.
15. No request for advance payment shall be entertained in any circumstances. After completion of the supply, the firm will submit bills in triplicate for payment, with a certificate of successful installation of the materials from the Head of the Department. Where applicable, GST will be deducted at source before release of payment to supplier.
16. The receipted copy of Challan shall have to be submitted to General Administration along with the bill through the Head/Competent Authority.
17. The successful bidder shall have to provide **on site warranty support for at least one year (or more as quoted in the tender paper)** from the date of successful installation. If any breakdown, non-functioning or malfunctioning of the machine occurs during the warranty period, the supplier shall have to attend to the complain within 24 hours (or in next working day in case of holidays) after receiving verbal /written /e-mail complain and will make the machines functional free of cost .In case the system has to be taken out of the University campus, the bidder should provide a stand by support system /peripheral with same or higher /new configuration / specification.
18. If the vendor/supplier /bidder fails to attend to the breakdown calls made within the warranty period , a portion or whole of the security Deposits decided by the University shall be forfeited .
19. The vendor should give a written undertaking that spares for repairing the supplied tools and machines will be available with them for the warranty period from the date of installation.
20. **Discretionary power** : The Head/Competent Authority, Assam University Silchar, reserves the right to accept or reject any or all tenders without assigning any reason there of and also to modify in exceptional case any of the stipulated terms and conditions on merit on genuine and justifying grounds if it is in the larger interest of the University. The final acceptance of the tenders rests entirely with the Head/Competent Authority who does not bind himself to accept the lowest tender.
21. **A) Rate** : Various charges and taxes must be clearly mentioned separately.

B) GST : Rate inclusive of GST will be preferred however, where quoted separately, the rates payable should be clearly cited in accordance with provision of relevant Act and rules.

C) Form ‘C’ & ‘D’ : Assam University Silchar is authorized to issue ‘C’ & ‘D’ Form against CST/GST as applicable.

22. **A) Consignee:** All stores are required to be consigned to the Head/Competent Authority, Assam University, Silchar-788011 (Assam).
- B) Mode of dispatch:** The consignment is required to be dispatched by Road Transport or delivered at the Department **of this University under supplier's own arrangement free of additional charges**. All offers of delivery should be made ex-stock and clear note should be inserted in case of damage or loss in transit, if any will be borne by the supplier.
- C) Dispatch of Document:** The consignment note along with the quadruplicate of copy of relevant bill and two copies of priced challan should dispatch to the Head, Department of Agricultural Engineering, Assam University, Silchar-788011 (Assam) immediately on completion of dispatch of consignment. If these documents do not reach the said office in time all wharf age/demurrage incurred, if any will be recoverable from the suppliers.
23. **Delivery:** The equipment/tools are required to be delivered/dispatched **within thirty days** from the date of receipt of the supply order/or as per mutual agreement. Suppliers are requested to take care that all the items mentioned above are to be supplied **in full set basis** and the items are required to be installed in the Laboratory/field. User's manuals for the items (as applicable) are also to be provided along with the items supplied.
24. **Quality Specification:** The stores offered should be of the best/standard quality available unless, otherwise specified conforming strictly to the specification cited. The Head/Competent Authority reserves the right to reject such stores as are found unacceptable on these grounds. Items of only reputed manufacturers will be given preference.
25. **Liquidated damages:** If a firm accepts the order and fails to execute the order in full or part as per terms and conditions stipulated therein, it will be open to the Competent Authority to recover liquidated damages from the firm at the rate of 1% per month or the part thereof, subject to a maximum of 5% of the value of the undelivered stores. It will also be open to the Competent Authority, alternatively to arrange procurement of the required stores from any source, at the risk and expense of the firm that has accepted the order and failed to execute the order according in stipulations agreed upon. This will also entail removal of the defaulters name from the approved/registered list of suppliers.
26. **Quantities:** The approximate quantities of item proposed to be purchased as mentioned in the list are liable to be **increased or decreased** at the time of placement of purchase order.
27. **Special discount/rebate:** Special discount/rebate admissible to Educational Central University may be specifically indicated in the quotation.
28. **Rejection of offer:** Tenders not conforming to the terms and conditions and procedure so outlined are liable to be rejected summarily.
29. **Guarantee/Warranty:** The tools and machines should be covered by warranty of quality/warranty of performance and manufactures defect for a minimum period of twelve month from the date of satisfactory installation as the case may be.
30. **Special condition:** Special condition, if any, printed on the quotation sheets of the tenders or condition attached with the tender will not be applicable to the contract unless these are expressly accepted in writing by the Director. Due weight age will be given to bidder offering warranty for a longer period.
31. **ISI Marks :** The tenders shall specify whether the articles offered bear bureau of Indian standard certification mark or not. In such cases they shall produce copies of certification mark along with their tender in support of it. Also specific make and model No. of the equipment is to be mentioned.

32. **Discretionary power** : The Head/Competent Authority, Assam University Silchar, reserves the right to accept or reject any or all tenders without assigning any reason there of and also to modify in exceptional case any of the stipulated terms and conditions on merit on genuine and justifying grounds if it is in the larger interest of the Institute. The final acceptance of the tenders rests entirely with the Head/Competent Authority who does not bind himself to accept the lowest tender.
33. If any dispute arising out of this supply contract, it will be subject to Silchar jurisdiction only.
34. The following updated documents should also accompany with the tenders:
- **Trade Licence**
 - **Income Tax clearance certificate**
 - **Sale Tax clearance certificate**
 - **GST clearance certificate if quoted in the tender for GST**

Those tenderers, who accept the above terms and conditions, may submit their tenders in the prescribed format along with all relevant documents / brochures to the office of the undersigned on or before the stipulated date. The tenderer must also submit a certificate in their official pad stating that all the above terms and conditions are acceptable to them.

Sd/-
Head
Department of Agricultural Engineering

Memo No. AUS/TSSOT/AE/Procurement (ACF)/Tender/2017/01 Dated 27th October 2017

Copy To:

1. The P.S. to VC for kind information of Hon'ble Vice Chancellor.
2. The Finance Officer, Assam University Silchar for kind information.
3. Registrar, Assam University Silchar for kind information
4. The Dean, Triguna Sen School of Technology for kind information.
- 5. Director, Computer Centre, Assam University, Silchar for Web site uploading.**
6. Sri/ M/S _____ for kind information.
7. File

Sd/-
Head
Department of Agricultural Engineering

**List of Laboratory equipments and accessories for the Department of
Agricultural Engineering, 2017**

Sl No.	Name of Items		Specification	Quantity
1	Soil Core Sampler	(i)	Full set of different sizes with accessories, GEOSYN soil core sampler for taking undisturbed soil samples in stainless steel rings of 60 mm dia, 100 cc internal volume, stainless steel rings with end caps and one nylon headed hammer.	2
2	Drawing table	(i)	Adjustable Drawing Painting Easel (65 X 48 X 47 cm) <ul style="list-style-type: none"> • Brustro easel is fully Adjustable Surface For Drawing, Painting And Designing. • The easel is easy to transport, travel and carry. • Solid Hardwood with Natural Beechwood finish • Expanding the abilities of your workspace with multiple angle adjustments • Perfect for tabletop drawing, sketching and designing. Holds books and cookbooks also. Dimensions 65 × 48 × 47 cm. For both Student & Artist	10
3	Metric Chain	(i)	30 m	3
		(ii)	50m	2
4	Ranging rod	(i)	Surveying ranging rod (2m/3m)	20
5	Open Cross Staff with stand	(i)	<ul style="list-style-type: none"> • Surveying open cross staff • highly lacquered • with 4 vertical vanes in box • made of brass • 1.5m stand 	9
6	Prismatic Compass	(i)	<ul style="list-style-type: none"> • The compass can be threaded onto the lightweight surveyor's tripod with a ball and socket head using standard 3/4 inch x 24 threads. • The compass measures 4 3/8 inches (11.1 cm) in diameter, 1 1/2 inches (3.8 cm) thick, and weighs one pound, 3 ounces (539 grams). • When mounted on its tripod, the height of the compass is adjustable from a minimum height of 12 1/2 inches (31.7 cm) tall is a maximum height of 21 inches (53.3 cm) tall. • This compass is accurate with a resolution of about 1/2 a degree. Both the compass and tripod come with canvas cases. 	5
7.	Ordinary Rain Gauge	(i)	As per IS5225:1969 from non-corrosive fiber glass reinforced plastic. Key features; 1.200sq.cm collector with brass ring and funnel 2. 2 or 4 liter bottle for rain water collection included. 3.Measuring cylinder with 0.2mm graduation.	1
8.	Lynx Self Recording Raingauge (10 mm)	(i)	Self recording rain gauge as per IS-5235-1969	1
9.	Graphical type Self Recording rain gauge	(i)	Graphical recording rain gauge, Make; SNS with all accesories	1

**List of Laboratory equipments and accessories for the Department of
Agricultural Engineering, 2017**

Sl No.	Name of Items		Specification	Quantity
10	DC Pump ,1 Hp	(i)	Make: Kirloskar /others (without motor)	1
		(ii)	Make- Kirloskar/others-with motor, Make-Skylark/GE	1
11	Centrifugal Pump with Motor	(i)	Make- Kirloskar/others, Pump (AC 3-phase, 3 Hp)	1
12	Centrifugal Pump with Motor	(i)	Make- Kirloskar/others, (AC Single-phase, 2 Hp)	1
13	Mechanical Water meter	(i)	Inlet/Outlet dia (1/2")	4
		(ii)	Inlet/Outlet dia (1")	3
		(iii)	Inlet/Outlet dia (1.5")	2
14	Pressure Gauge (water)	(i)	Mini Dial Pressure Gauge Manometer for Water Air Oil Black 0-60psi 0-4bar	2
15	Porometer, infra red thermometer	(i)	Porometer, Infrared thermometer for scheduling irrigations to crops	1
16	Pressure bomb or pressure chamber apparatus	(i)	An instrument with which it is possible to measure the <u>water potential of plant tissues</u>	1
17	Soil moisture sensor Cable	(i)	60M Cable for SM-1 Soil Moisture Sensor	1
18	PVC Pipe	(i)	1" dia	30
19	Pipe fittings		Elbow, socket and Union (1" dia) preferably UPVC	30 (10 each)
20	Hydrometer	(i)	Soil hydrometer,ZEAL-England,ASTM-152H,Range-5-60gm/lit,temp-68°c	4
21	Ceramic tip for Tensiometer	(i)	Dia: 19mm	40
22	Grinder Machine	(i)	Makita/others 250 Watts Bench Grinder GB602	1
23	Anvil	(i)	Lion 139 / others: Anvil, Weight: 50 kg	2
24	Cutting Machine	(i)	Bosch GCO 2400 14-inch 2400-Watt J Cut-Off Saw	1
25	Swage block	(i)	100kg	1
26	Coaxial Research Microscope	(i)	Coaxial Research Microscope Viewing Head :- Siedentopf Binocular/ Trinocular 30° Head, IPD 55-75mm Eyepiece :- Wide field Eyepiece WF 10X / 18 (Pair) Objective: - Anti Fungal Achromatic DIN Objective 4X, 10X, 40X & 100X (Oil Immersion) Dimension & weight: 36 x 26 x 46.5 cm & 8.5 kg.	01

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Sl No.	Name of Items	Specification	Quantity
27	Seed/Grain Divider (Boerner type)	(i) Cup made in Single Piece from die increases accuracy of the boerner divider. <input type="checkbox"/> 38 opening or Pockets. <input type="checkbox"/> Meeting BIS specifications <input type="checkbox"/> Sample upto 1000gm. <input type="checkbox"/> No Electrical requirement & easy operation. Size : 86cm Height x 38cm dia (Approx.) No. of Pockets : 38 Weight : 8 Kg (Approx.) without Pan No. of Pans : 02	01
28	HAND SEALER MACHINE	(i) Salient Features: <input type="checkbox"/> Suitable to Seal Plastic bags and Tubes <input type="checkbox"/> Adjustable Heat Timer. <input type="checkbox"/> No Warm Up time. <input type="checkbox"/> Ready for instant use. SPECIFICATION: Sealing length : 8” Electric Powered : 220 V Power : 0.5 K.W.	01
29	RICE SHELLER	(i) Capacity : 40-50kg/hr Shelling Mechanism : Comprises of two rubber roller Rubber roller : 100mm x 35mm (approx) Husk Collector : To collect husk from each sample for further analysis Operating Voltage : 220V, 50Hz, A.C. Motor : 0.25 HP Single Phases (180W) Size : 700 (L) x 330 (W) x 817 (H) mm (approx.) Weight : 41 Kg (approx.)	01
30	Universal Moisture Meter (Mild Steel Body)	(i) Commodity : Food grains, Pulses, Oil Seeds, Vegetables Seeds etc. Range : 3.5 to 40% Consistency : $\pm 0.2\%$ Transducer : Compression Unit annul the porosity Effect. Principle of measurement : Resistance. Temperature compensation : Automatic with PT-100 temperature sensor. Range selection : Automatic Low Bat indication : Automatic Error conditions : Displayed. Power : 9 V DC, operated through 230V, 50Hz, AC main or 6 dry cells Size: (LxBxH in cm) : 45 x25x33 cm (approx). Weight : 24Kg (approx).	01
31	LAB ASPIRATOR	(i) Size : 51 x 30 x 82.5 cms. (Approx.) Hopper Capacity : 2.2 Kgms. (Approx.) for Wheat/Rice. Motor : Mains operates, 70 W (approx.), 220 V, 50 Hz AC	01
32	Digital temperature & Humid Indicator	(i) Desktop placing or wall mounting <input type="checkbox"/> 16x2 line LCD display with switch selectable backlit. <input type="checkbox"/> Low power consumptions & high stability & accuracy. <input type="checkbox"/> Power : 220 V 50 CPS AC supply HUMIDITY Range : 5% to 95% RH	01

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Sl No.	Name of Items		Specification	Quantity
			Resolution : 0.1% RH Accuracy : $\pm 2\%$ RH at 25°C TEMPERATURE Range : -40°C to +60°C Resolution : 0.1°C Accuracy : $\pm 0.5^\circ\text{C}$ at 25°C	
33	Seed grader/paddy cleaner	(i)	Capacity : 25-40 Kg/hour (based on Paddy) Size : 80 cm x 54 cm x 75cm. (Approx). Weight : 39 kg (approx). Operating Voltage : 220V, 50Hz AC Screen Area : 30 x 25.4cm (approx). No of working screen : Two Motor : 1/2 HP Single Phase. Handle : For manual operation of Machine. Operation : Manually/Electrically	01
34	Set of 10 sieves	(i)	Set of 10 Sieves Sizes: 2.75 OH, 2.0 OH , 1.85 OH, 1.75 OH, 1.5 OH, 3.5mm OH, 5.0 RH, 1.2 RH, 7.0 RH, 1.6 RH	01
35	Seed Trier 75cm 1.25cm brass	(i)	Material of Construction - Brass Smooth Finish Double Tube Length 75cm, outside Dia 1.25 cm, 5 Openings	01
36	Parkhi 9"	(i)	Made of Brass with Chromium Finishing □ Size : 9"	01
37	Parkhi 6"	(i)	Made of Brass with Chromium Finishing □ Size : 6"	01
38	Multimeter , Chauvin Arnoux C.A 5233	(i)	CAT IV 600V, TRMS measurements Large 6,000-count backlit display (digits 8 mm high) 61-segment bargraph No-contact voltage detection (NCV) VLow Z low-impedance voltage measurement to avoid stray voltages. Min, MAX and RELATIVE functions Measurement up to 600 V AC or DC current measurement up to 10 A Frequency measurement Capacitance measurement 60 mV range	1
39	LAQUATwin PH11 waterproof pocket pH meter	(i)	pH range: 2.00 → 12.00, Temperature (ATC): 5.0 → 40.0°C, Accuracy / Précision 0.1 pH , Calibration 4.01 & 7.00, Size / Dimensions 6.5" X 1.13" X 0.75" Power / Alimentation 2 X 3V (CR2032)	1
40	Black & Decker KS700PE 480-Watt Variable Speed Pendulum Jigsaw	(i)	<ul style="list-style-type: none"> • Power: 480-Watts, Speed: Variable, Strokes: 0-3000/ min, Bevel cut: 45 Degree, Max. Depth of Cut: Wood - 60 mm, Steel - 5 mm, Aluminum - 10 mm, Cable Length: 3 M, Weight: 1.9 Kg. • Variable Speed Trigger improves quality of cut through various materials and tasks • Lock-On switch for increased comfort during prolonged cutting tasks. Beveling shoe allows you to cut at 45 Degree Angle. Pendulum mechanism increases cutting speed 	1

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Sl No.	Name of Items		Specification	Quantity
			through softer material	
41	LAQUATwin PH11 waterproof pocket pH meter	(i)	pH range: 2.00 → 12.00, Temperature (ATC): 5.0 → 40.0°C, Accuracy / Précision 0.1 pH, Calibration 4.01 & 7.00, Size / Dimensions 6.5" X 1.13" X 0.75" Power / Alimentation 2 X 3V (CR2032)	1
42	Bosch GSR 1080-2 Cordless Drill Driver with drill set	(i)	14.4V 2-speed Drill Driver with powerful performance. 2-speed gearbox, 15+1 clutch settings: Perfect torque adjustments for precise screw driving. Forward/reverse rotation for inserting and removing screws, Bosch X30Ti 30 piece Drill Bit and Driver Bit Set	1
43	40 Watt Hot Melt Glue Gun with Coated Nozzle	(i)	12 inch, Heavy duty 60 watts hot glue guns	1
44	Digital calliper	(i)	Four-way measurement capacity for multiple applications. Position memory for retaining measurements. Function control buttons on the face easy use.	2
45	Magnetic stirrer and hot plate	(i)	<ul style="list-style-type: none"> • Temp. Range: Ambient +5 to 380°C • Speed Range: 200 to 1500 rpm • Operating Temp. Range: +4 to +65°C • Ceramic work surface, 6.5 x 6.5 in. 	1
46	Generic WYIN DIY CO2 Generator Dedicated Low temperature Electromagnetic Valve	(i)	fixed flow solenoid valve above one bubble per second; you set it at 2 or 3 bubbles per second canister will last. ?compatible with d201,the tube length is 1.3m,and the d301 need 1.5m,the d501 need 1.6m	1
47	Bosch All-in-One Metal 108 Piece Hand Tool Kit	(i)	<ul style="list-style-type: none"> • 9 Screwdriver Bits, 6 Hexagon Socket Wrenchs, 8 Precision Bits, 2 Adaptors, 1 Ratchet Hand Screwdrivers, 8 Allen Keys, 3 Masonry Drill Bits, 30 S-Plugs, 30 Screws, Flat-nose Pliers, Combination Pliers, 1 Tester, 1 Hammer, Cutter, Measuring Tape 3m, 1 Insulation Tape, 1 Torch, 1 Wrench, 1 Handsaw • Precision bits for mobiles and laptops, screwdriver bit for all household work • Allen Key for all maintaianace work, hammer and electrical tester is must have for your home • Handy storage kit for all handtools and bits, comes in a compact suitcase for easy carriage and handling • Lightweight and stylist looks,low risk of breakage thanks to excellent elasticity, Bosch quality 	1
48	Servo Motor 0.6KG/cm - 0.8KG/cm	(i)	Simple typical 3 pin interface - +V, GND and Signal, Operating Voltage: 4.8V DC - 6 VDC, • Output Angle: ~170°, Stall Torque: > 0.6 kg.cm (11.11 oz.in) at 4.8V, Operating Speed: 0.09 sec / 60° at 4.8V	10
49	Arduino Uno [Original - with Cable	(i)	Microcontroller ATmega328, Operating Voltage-5V, Supply Voltage:7-12V Digital I/O Pins 14,Analog Input Pins 6, Flash	2

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Sl No.	Name of Items		Specification	Quantity
			Memory 32 KB (ATmega328) SRAM 2 KB (ATmega328), EEPROM 1 KB (ATmega328), Clock Speed 16 MHz	
50	Arduino Mega 2560 Microcontroller with usb cable	(i)	Microcontroller :ATmega2560 Operating Voltage: 5V Input Voltage (recommended) Memory: 256 KB of which 4 KB used by bootloader SRAM: 8 KB EEPROM: 4 KB	2
51	DC Motor	(i)	12 volts, 50-100 kg.cm torque, 5-10 A current., 6mm shaft dia, 200 rpm geared	5
52	Bosch marble/metal cutter	(i)	BOSCH 4" Marble/Wood Cutter ~Model No GDC 120~& Bosch 4"/30Teeth TCT Blade	1
53	Solar cell	(i)	polycrystalline, 156 X 156 mm, 4.3 watt	50
54	Traxxas 4628X Steel Drive Yokes	(i)	Hardened steel, 12.4 x 1 x 8 cm	2
55	100 RPM Rectangle DC Geared BO Motor Single Shaft	(i)	RPM: 100, Operating Voltage : 3V - 9V, Gear materials: plastic, Motor types: permanent-magnet, Brush-type: Brush, Uncommitted motors: Homopolar motors, Magnet types: ferrite magnets, Torque: Approximate 2.2Kg/cm	5
56	Invento Nema 17 4 Kg-cm Bipolar Stepper Motor	(i)	Voltage:3-6V,Torque:4kg-cm,Step Angle:1.8deg/step,Shaft Diameter:	4
57	Battery – 12 volt	(i)	Exide 12 volt 26AH Powersafe Sealed maintenance free Battery. Original Replacement to UPS Battery. Exide EP 26-12	5
58	Stop watch		30 Minute 1/5 second intervals	2
59	High efficiency semi flexible solar panels (40w Monocrytalline panel)		40 watt, Max Voltage(Vmax): 18V Max Current(Imax): 2.22A Open Circuit Voltage: 21.6V Short Circuit Current: 2.44A Maximum System Voltage: 600V Number of cells in series : 38 Weight: 0.6KG Dimension: 560*410*3mm Cable 4 SQ MM with 90CM with MC4 Connector	4